Technology Opportunity

Structural Dynamics Laboratory

Vibration testing is employed to ensure the suitability of a test article for its intended use. Suitability is established with respect to at least one of the following three criteria: (1) structural integrity, (2) adequate functional performance, and (3) quality assurance level.

Potential Commercial Uses

- Flight qualification (aircraft or space flight) of any electrical component or structural system
- Automotive and marine component testing
- Uses in other industries where vibrational response is considered critical

Benefits

- Saves money by uncovering design or construction weaknesses in a laboratory environment before actual use of the article
- Examination of article response is more accurate than would be possible in the use environment (especially crucial with one-of-a-kind systems)

The Technology

The Structural Dynamics Laboratory (SDL) offers the following services:

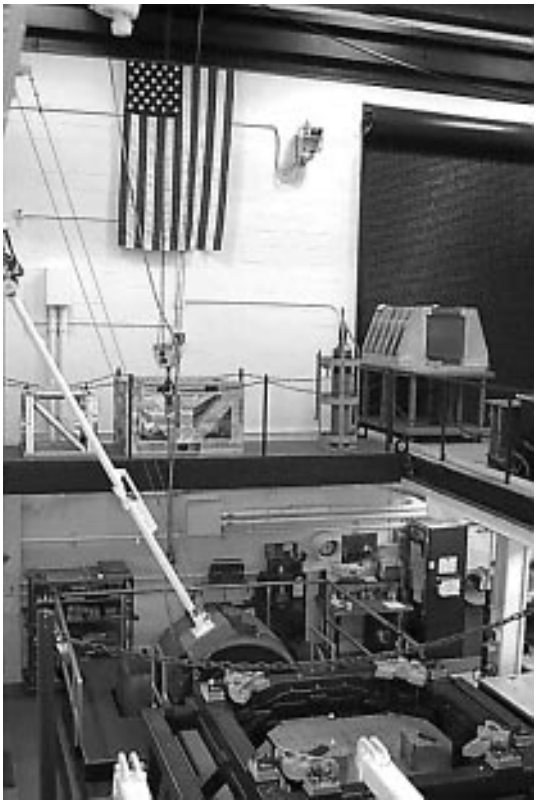
- Requirements definition and planning
- Fixture design and fabrication
- Test operations
- Data interpretation and documentation

Structural Dynamics Laboratory control room.

The vibration testing service can support all phases of the hardware development process, including

- Engineering evaluation
- Design qualification
- Service hardware acceptance
- Verification and certification of flight hardware

SDL can perform random, sine, shock, and mixed-mode testing. Its excitation system—which is capable of 40,000 lbf sine and 35,500 lbf random testing, 36 channels of frequency-modulated tape recording, and 96 channels of data acquisition—can meet most testing needs. SDL performs over 130 vibration tests each year.



Structural Dynamics Laboratory,
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National Aeronautics and
Space Administration
Lewis Research Center

Options for Commercialization

Legal paperwork is in place such that the facility's services can be funded by the public sector.

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Key Words

Vibration testing
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Functional performance
Quality assurance
Structural Dynamics Laboratory

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